Translating environments

Translating environments: translation and indeterminacy in the making of natural resources

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Introduction: Translating environments

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ABSTRACT

Far from being inert materials activated by human ingenuity, natural resources come to be made and unmade through ongoing processes of translation, through which they acquire new potentialities and meanings. In this introduction, we review the key concept of translation for anthropology and explore some of its multiple analytical possibilities in the context of human-environment relations. Based on insights offered by the articles in this collection, we propose a twofold definition of environments as both translating subjects and objects of translation. In grounding our analytical definition, we focus on the enactment of material transformations (as the result of both relations of mutual determination with humans and processes of objectification of the environment), the implications of incommensurability and erasure in processes of (attempted) translation, and the indeterminacy that accompanies (re)configurations of materials, relations and values.

KEYWORDS: natural resources, translation, environment, temporality, enactment, epistemology.

Can "natural resources" be made? A first reaction to this apparently paradoxical question is to answer no. Natural resources have been customarily understood as inert materials, which can be acted on through a posteriori processes of commodification. According to the Oxford Dictionary, natural resources encompass all those "materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain". Such a definition has been reified by a long trajectory of economic thinking, including classical and Marxian economics, whereby natural resources exist in a realm separated from the human and can be transformed only in relation to their use and exchange values. Customary understandings of natural resource use are embedded in the broader intellectual tradition of human exceptionalism, which presupposes the existence of nature as a self-evident ontological field sharing none of the inherent traits of humanity. Inspired by a more recent criticism of the nature-culture divide embedded in much of Western intellectual history (Descola 2013; Haraway 1991; Latour 1993; Strathern 1980; Viveiros de Castro 2011), social sciences in the last three decades have been increasingly drawn to the examination of those epistemic and ontological processes through which natural resources come to be constituted as things of value (Bridge 2009; Ferry and Limbert 2008; Howe and Boyer 2015; F Li 2015; TM Li 2014; Richardson and Weszkalnys 2014; Strang 2004; West 2012). Natural resources, we have learned, can be made - and unmade.

Drawing on anthropological insights on translation, this special issue examines the constitution of "natural resources" through different processes of *translation* unfolding in their use, management and conservation across four continents. The contributions provide historically grounded ethnographic illustrations of how multiple and often conflictive processes of translation (and its failures) contribute to the making of natural resources, and the emergence or suppression of alternative realities: from

powerful local and global discourses of 'nature' and 'resources' that have been privileged at the expense of social justice and collaboration in Nepal (Campbell), to the shifting material and social landscapes that are experienced and inscribed in the rugged forests of Ecuador (Kneas). The papers evoke the multiple and often multi-layered relations inherent in negotiations about public lands (Brugger et al.), wilderness (Nustad) and species (Cahill).

This collection builds on an understanding of translation as a practice that "exceeds language" (Hanks and Severi 2014), and can consist of both an alteration from one set of codes to another and a process of transformation and movement of simultaneous change and continuity (Gal 2015:226) - as its etymology ("to carry across" or "to move from one place to another") implies. Processes of translation across different materialities and human groups can be problematic and productive, involving relationships and objects that are at once material and imaginative, instrumental and meaningful. Through such translations and reconfigurations of relations among individuals and groups, humans and non-humans, natural resource use emerges as a process of ontogenesis, of becoming and/or "becoming with" (Haraway 2007), leading to changes that are not only discursive or cultural, but also material and embodied. Natural resources undergo continuous transformations as the result of both relations of mutual determination with humans and processes of objectification through which they are imbued with conflicting meanings and symbols.

To explore the effects of translation on the constitution of natural resources, we follow a twofold definition of environments as both translating subjects and objects of translation. "Translating environments" can be conceptualized as assemblages in which productive relations involving humans and non-humans are articulated as the consequences of human responses to continuous transformations in the environment rather than the direct result of social action and intentionality (see de Landa 2006; Latour 2005). As suggested by Jane Bennett, "in lieu of an environment that surrounds human culture, [one can thus] picture an ontological field without any unequivocal demarcations between human, animal, vegetable or mineral. All forces and flows (materialities) are or can become lively, affective and signaling" (2010:117). In this analytical type of environment, rather than an exchange between discrete units, translation consists of a process of enaction through which new forms of life are constituted (see Ingold 1993). While environments have an inherent potentiality to translate things, bodies and ideas, they are also materially and symbolically produced by human attempts to objectify them. Environment thus comes to be constituted as the merging of multiple representations, which are asymmetrically translated across social boundaries. Translations are able to create equivalences and organize connections among practices, while also producing incommensurabilities, disjunctures and power differentials (Gal 2015:226). The articles presented in this volume highlight the central role of translation in articulating the co-existence of environments inhabited and made meaningful by different singularities and collectivities. Ultimately, a focus on theories and practices of translation deployed in the making of natural resource helps us to uncover both the incommensurability of different

environments and the emergent forms and indeterminacies generated by their ongoing transformations.

Anthropology as and of translation

Anthropology is well-placed to examine and reflect on the practices and notions of translation imbricated in the constitution of natural resources. Translation is at the very core of anthropological thinking and practice: as an epistemological concern relating to the discipline's comparative stance; as an object of study; and as a practical consideration for conducting ethnographic enquiry. Since its very beginning, anthropology has adopted cultural translation as its primary mode of analysis to the point that the metaphor of cultural translation has come to define the anthropologist's task as a whole (Pálsson1993:10). With the development of Malinowskian ethnographic method, it became commonplace that ethnographic data collected through rigorous observation could be translated into theoretical frameworks through a universal language. Despite its centrality in anthropological analysis, however, translation remained a self-evident methodology: as an epistemological principle it was rarely subject to discussion for much of the history of the discipline (Hanks and Severi 2014:8; Rubel and Rosman 2003:3). The asymmetries of translation embedded in anthropological research remained unproblematized until post-colonial studies drew attention to the intimate relation between academic production and coloniality. In the development of comparative regional studies, to which anthropology has historically contributed, cultural translation unfolded as a unilateral transposition of the colonized world into a supposedly neutral scientific language, a point notably raised by Talal Asad (1986). In the 1980s, post-colonial critiques of anthropological translation spurred a well-known reflection on the production of ethnographic texts, in which translation was identified as a primary feature of representational authority (Clifford and Marcus 1986; Clifford 1997).

The reflexive turn of the 1980s stands as an apex of a prolonged dissatisfaction with the idea of cultural translation as an objective practice of social systematization. The *traduttore-traditore* (translator-traitor) conundrum came to be envisioned not only as a methodological danger to be controlled by ethnographic contextualization, as in Malinowski's early concern (1935), but as an inherent element of this discipline. Anthropological reflection on the limits of translation did not however lead to an impasse. Rather, it sowed the seeds for a growing interest in the analytical potentiality of incommensurability and mistranslation (Maranhão and Streck 2003; Zeitlyn and Just 2014: 107-109). Following Roy Wagner's (1981) definition of culture as a framework of alterity generated by mutual attempts of understanding between different interlocutors, translation can be understood as one of the key relational processes through which any collectivities become self-conscious about their difference with others. As Timothy Choy puts it: "the translation event is paradoxically productive of difference, even while it builds a putative sameness across that difference" (2005:12).

Within any social context, individuals are involved in instances of translation through which initially unfamiliar events, phenomena, symbols, materials and practices are incorporated and rejected along porous cultural boundaries. In anthropology, the

recognition that cultural translation is not a prerogative of anthropology, but rather a relational process pervading all social scenarios encouraged the ethnographic rediscovery of translation as a material and communicative process saturating all aspects of social life. Such recognition has been pivotal to a redefinition of anthropological research as "the study of the empirical processes and theoretical principles of cultural translation" (Hanks and Severi 2014:1). Today, translation figures as a primary research interest as it provides analytical strategies to examine all those transnational, cross-regional and inter-ethnic phenomena concerning movement of people, things and ideas, which characterizes much of anthropological imagination nowadays. As such, translation is inherently political as it sheds light on the asymmetries between the phenomena that it aims to make mutually legible. How are Christian bibles translated into local animist practices? How are ecological disasters translated in different contexts causing environmental mobilization? These are just some of the questions revealing the potential of thinking through translation in examining global social transformations (Gal 2015:225).

The analytical potential of translation appears clearly in the making of natural resources. Their constitution is made possible by the mobility of materials and ideas across porous boundaries, which are crossed through multiple acts of translations. In our analysis of natural resource making, we take translation as an act of transformation among human and non-human elements of society (people and materials) as much as an alteration of divergent notions, such as energy, community, nature, ethnicity, and marginality, brought together in often conflictive terms by discourses and practices of natural resource use, conservation and management. The different ethnographic cases presented in this volume consider two analytical potentialities of translation: firstly, to reveal how material transformation is enacted through time; secondly, to highlight negotiation, incommensurability and erasure of environmental notions and practices among social groups.

Enacting material transformations

The first analytical potentiality of translation concerns an understanding of the environment as an assemblage composed by human and non-human agents. Such a perspective owes much to post-Deleuzian developments, such as Latour's Actor Network Theory (2005) or De Landa's assemblage theory (2006), in which relations between singularities, in particular human and non-human, are understood through the prism of immanence and affect, rather than transcendence and objectification. In an assemblage, human and non-human components of society are not essences pre-existing the relations that constitute them and reified through taxonomic categories. Rather they come to be constituted through historical processes put in motion by their immanent interactions (de Landa 2006:28). Therefore, the study of assemblage requires an empirical examination of associations involving human and non-human actors that constitute it. In Latour's Actor Network Theory (ANT), translation figures as a key process in the emergence of new associations (see also Callon 1986). It designates a connection that induces mediators into coexisting and by doing so, generates traceable associations (Latour 2005:108). Mediators "transform, translate, distort, and modify the meaning or the elements they are supposed to carry" (ibid. 40). Latour provides the example of the

difference in value and social status associated with silk and nylon, which would depend not only on existing symbolic structures, but also on the many material nuances that create difference in sensory experiences. In another example, he describes the series of translations necessary to transform a set of soil samples into scientific concepts and claims about the advance or retreat of a tropical forest boundary (Latour 1999). In ANT, global connections are inseparable from their local instantiations which rather constitute them. Attention should be paid to the "continuous connections leading from one local interaction to the other places, times, and agencies through which a local site is made to do something" (Latour 2005:173). The global, transformative and material nature of translation and the ability of non-humans to enact action emphasized by ANT resonate amply with the generative processes of natural resources. The extraction, transformation and conservation of natural resources as diverse as fossil fuels, forests and water rotate around continuous processes of translations through which their value, meanings and the materials constituting them are transformed.

Callon's (1986) account of the translations involved in an economic and scientific controversy about natural resources (in this example, scallop stocks in a French bay) addresses power and influence in translation (see also Cahill, this volume). A group may gain influence and the ability to control others and represent the world in their own terms by enrolling different interest groups and building alliances, while intercepting those between other groups. Drawing on these concepts developed in social studies of science, anthropologists and geographers have also examined processes of alliance-building and cutting in resource controversies, additionally attending to what is concealed, silenced, lost, and negotiated in translation. For example, Leah Horowitz (2012) has explored how attempts to align translations among indigenous protest groups, environmentalists, lawyers, governments and industry precipitated alterations and disrupted power dynamics in Melanesian debates over mining; Andrew Mathews (2008) has turned attention to the role (and indeed the fragility) of state power and bureaucracy in knowledge production and its effects in Mexican forests. Central to any controversy over natural resouces is the way in which scientific knowledge production gathers different patches of information and elaborates unstable divisions between processes and phenomena ascribed to the natural world. As Tsing (2015) reminds us, science operates as a translation machine capable of isolating and placing units of knowledge in established places within coherent narratives, without producing a unified narrative. This is because translation creates patches of incoherence and incompatibility, which are "neither closed nor isolated; they shift with new materials" (218).

With Abram and Lien (2011), we attend to how concepts and resources are both culturally constructed and "given substance" in the world. Abram and Lien use the idiom of performance to explore how relational ontologies (see also Brugger et al., this volume) produce and reproduce nature through doing as well as knowing; how discursive and practical acts reconfigure material-social phenomena. Alongside 'performance', our conceptualization of 'translation' aids understanding of how concepts, relations and material worlds are mutually constituted. Our analytic of translation draws close attention to what the articulation of the linguistic-representational with the material-performative

can reveal about the political and substantive emergence of environments that are themselves also translating subjects. The idiom of translation, with its associated problematics of (in)commensurability and (in)determinacy, offers a novel way into identifying and understanding alignment, accommodation, difference and failure in the creation and negotiation of value. The textual affordances of translation also allow for investigation of the diverse ways in which differently positioned actors encounter, read, translate and evaluate the social texts that accumulate in the production of often-unstable presents and indeterminate environmental futures. Paige West, in her afterword to this collection, summons the figure of the 'palimpsest' as a vivid way to think through the processual nature of the translations explored in these articles, and how they are inflected with histories, politics and possibilities that may be differently visible, accessible and meaningful.

Incommensurability and erasure

By emphasizing the constitution of natural resources as an unbounded process of translation, ANT potentially understates the possibility that certain practices and ideas remain incommensurable across different social worlds (Goldman 2009). The articles that follow this introduction thus show not only how natural resources are constituted as the result of culturally unbounded acts of translations between human and non-human elements of society, but also how practical instances of translation and mistranslation can reveal the incommensurability of different ways of understanding, valuing and relating to the social and ecological elements that compose any natural resource.

Research on environmental collaboration and conflict has illustrated the subtle and radical ways in which natural resources and associated knowledge production diverge across different social scenarios, such as those inhabited by local populations and development actors (Blaser 2010; Di Giminiani 2015; Haines 2012: Kirsch 2006; Mathews 2008; Tsing 2005; West 2005). A focus on the failures and fragility of translation can be fruitful inasmuch as it can reveal the resilience of local categories of being and the strategies through which technologies of commensuration erase local forms of environmental knowledge and practices. For Viveiros de Castro (2004), anthropology should not be concerned with accuracy of translation, but rather with the potentiality of failed translation to reveal ontological divergences. Translation thus would concern less the establishment of similarity than the recognition of difference: it would consist of "an operation of differentiation—a production of difference—that connects the two discourses to the precise extent to which they are *not* saying the same thing, in so far as they point to discordant exteriorities beyond the equivocal homonyms between them" (ibid. 20). In an ethnographic sense, failed acts of commensuration between development actors and local populations would reveal how different homonymic terms, such as water and trees, index singularities operating according to divergent ontological principles.

The limits of commensuration do not only reveal the resilience of local modes of environmental engagement, but also the broader political context in which imposed translations serve as erasures of sovereignty. Embedded in processes of capitalist

accumulation and colonialism are those technologies of translation serving to demote local ecological understandings to the categories of cultural representation and belief (Povinelli 1995; Viveiros de Castro 2011). For Mario Blaser, the effectiveness of these translations relies on the establishment of equivalences between representations and an already existing external reality (2010:152). By employing the supposed world "out there" as the referent through which different representations can be thought of as commensurable, translations based on the logic of representation work to impose modernist narratives about nature-culture over other forms of understanding the environment characterized by a relational stance (see also Escobar 2010). As argued by Paul Nadasdy (1999) among others, tropes such as "traditional ecological knowledge" and "indigenous technical knowledge" can work to reinforce western scientific and technical narratives and power: even as they recognize the validity and value of traditional/indigenous beliefs and practices they do this only insofar as this knowledge can be translated and integrated as "data" for use by resource managers. Other scholars have explored the circumstances under which shared knowledge and certain modes of reasoning (particularly those rooted in situated and relational ecological knowledge) may "flow" across worldviews, for example between indigenous knowers and Western scientists, as Laura Rival (2014) has examined through conducting ethnographic "fieldwork on fieldwork" in the context of ecological studies carried out in collaboration with Amazonian indigenous groups.

Incommensurability is not restricted to ontological difference in the objects of translation. It is a condition directly dependent on processes of knowledge production and in particular the very understandings of what translation can and cannot achieve. In different historical moments and social scenes, ideologies of translation might differ in relation to the ideas concerning knowledge production, translatability, intelligibility and the preferred modes of communicative exchanges under which translation unfolds, in some cases favoring material exchanges over words and texts, in others the opposite (Gal 2015:227). Therefore, even the translatability of natural resource might be questioned on the ground that the notions of "resource" and "nature" might make in little sense in certain social contexts.

One practical, and clearly problematic, strategy to overcome the predicament of translatability is to rely on a type of translation designed to make specific forms of human-environmental relations fit into the generic categories. This type of translation is commonly found in discourses on health, environment, gender and human rights articulated in the context of transnational governance. In the case of natural resources, relations between assigned experts and non-expert locals generated by development and modernization projects are often inextricably characterized by the unilateral direction of global-local translations, that is, taming and rendering local lives and knowledge generic (Errington and Gewertz 1995; West 2005) and legible (Scott 1998). Paige West (2005) has shown that in the context of conservation initiatives in Papua New Guinea translations between development actors and Gimi people are based on an understanding of environments as knowledges and resources to be acted on. While such an understanding of the environment makes environmental engagements translatable, it

ultimately obscures the fact that in Gimi world environments are materially constructed through transactive relations and mutual recognition among people, forests and animals (ibid. 633). Translation in this case makes mutual communication possible through the reification of asymmetries between global and local environmental knowledge (see also Bicker et al. 2003; Brosius 1996;). Choy (2005), writing about translations of expertise in the case of an incinerator controversy in Hong Kong, shows that counter-expertise is rendered legible and credible in the arena of environmental politics only by articulating both the universal and the particular at once. These articulations are not always achieved: there is a political economy of expertise that excludes people and knowledges who cannot or will not articulate in this way.

The political significance of translation discussed so far is particularly instructive in the analysis of the intersection between natural resource constitution and multicultural governance – the theme of most of the articles presented in this collection. The consolidation of late liberalism in the last forty years has centered on the development of multicultural politics that could accommodate emergent claims of diversity within ideas of nation state. As suggested by Povinelli (2001), in liberal multiculturalism, the recognition of cultural difference is made possible by technologies of commensuration inspired by the principles of public reason according to which only differences consensually recognized through a shared civic agreement should be commensurated within the political arena. Public reason works to legitimize communication strategies aimed at commensurating morally and epistemologically divergent social groups by "making radical worlds unremarkable" and thus disarming the threat posed by subaltern and colonized groups to the ideals of national cohesion and market inclusion (ibid. 320). Commensuration technologies designed around the principles of public reason pervade all political spaces, where domestication of difference is necessary from a governmental point of view. This is the case of environmental conflicts involving local populations where commensuration allows the delimitation of acceptable difference concerning claims over natural resource use or conservation. Disputes over mega-development projects and national parks affecting indigenous people exemplify the role that commensuration strategies hold in curtailing local claims of ownership or custodianship over natural resources, which contradict development narratives justifying extractive processes in the name of collective good.

Indeterminacy and the work of translation

As we have discussed, processes of translation can be productive: generative of new meanings, conversations and relationships, yet also leading to silencing, failure and erasure. The outcomes of these ongoing translation processes are often characterized by indeterminacy that speaks of the performative potential of translation to shape the emergence of socio-ecological worlds in the making. Such a recognition reinforces our argument that "translating environments" – in both senses explained above - are legitimate, fruitful and timely subjects for anthropological research, corresponding with arguments that navigating contingent and indeterminate worlds in formation, and exploring the processes, technologies and - we suggest - translations, through which "unconditioned outcomes" are imagined and precipitated is a productive for

anthropological inquiry (Sneath et al 2009; for discussion of debates about ontology and translation in science and technology studies, see Woolgar and Lezaun 2013) and indeed for life itself (Ingold 2006; 2011). We note, too, the resonances with recent scholarship addressing the "feral", "unruly" nature of environments that elude stable definition (Tsing 2012), troubling comfortable categories of translation and calling attention to intricate entanglements of power, refusal, escape and cunning in the formation, decay and reshaping of environments through translation and its failures and subversions.

Starting with indeterminacy means recognizing that natural resources are less stable entities to which standardized values and meanings can be attached, more transformative hybrids, whose value depends on multiple and often contradictory attempts of objectification. Historically, the indeterminate character of natural resources stands as a key problem in political economy. The governance of natural resources becomes visible in the deployment of complex technologies that allow the framing of overall values. The quantification of multiple values and affordances associated with natural resources becomes a necessary step in making a particular resource available to global markets. The current land rush we are experiencing has been made possible by the development of innovative inscription devices, such as survey mechanisms, which make land readable and thus attractive to transnational investment (Li 2014:489). Putting a price on nature is of course not a recent business. The translation of the so-called natural world into forms of economic values is a key feature of capitalist accumulation, as historical processes of enclosure of commons and their inclusion under the auspices of a self-regulating market have dramatically illustrated (McCarthy and Prudham 2014:277). Through trading, natural resources and their local knowledge are eventually translated into forms of capitalist values (Tsing 2015:64). Despite the long history of capitalist translations of the natural world, this phenomenon has acquired an unprecedented turn with neoliberalization of natural resources (McCarthy and Prudham 2004). Payment for ecosystem services (PES), is perhaps the phenomenon that more than others epitomizes the need for determination of natural resource values under neoliberalism. Compensatory mechanisms for farmers and landholders who refrain from extracting specific natural resources, such as forests or water, require new standardization techniques to attach non-use values to ecosystem features. This particular type of commodification, seen by some as a possible contribution to new green form of capital accumulation as in the case of the carbon market (Bumpus and Liverman 2008), reinforces an idea of natural resources as objects with exchange values detachable from the livelihood of the people interacting with them (McAfee and Shapiro 2010). Overdetermination through inscription devices ultimately entails the demotion of those relations of exchange and affect responsible for locally articulated meanings and agential abilities of natural resources. A focus on the indeterminancy of natural resource helps us to recognize their inherent vitalism, which escapes any attempt of overdetermination, as well as the political struggle over the consenquences and effects of the translation behind their constitution.

Translating environments in discourse and practice

The articles that follow this introduction illustrate how boundaries between collectivities are crossed and/or made impermeable through different processes of translation. They also highlight the transformative potentiality of translations in the making of natural resources, while illustrating the asymmetries generated by communicative exchanges aimed at commensurating difference concerning the very understanding of what nature and resource are. Nustad's article examines the multiplicity of translation by focusing on the history of forest use around KwaZulu-Natal, South Africa. The article begins with a classic anthropological quandary, namely the existence of multiple localities in the same physical space, in this case the forests adjacent to the iSimangaliso Wetland Park. The emergence of different forest worlds is not simply the result of the historical consolidation of different cultural constructs whereby the forest, as a clear epistemological object, is defined and understood by colonial actors and local population as intensive farmland, wilderness to be protected through conservation, and an unbounded space used locally for small scale production. The coexistence and entanglement of multiple forests in the same space is a question not merely of anthropological interest, but one entrenched in the politics of conservation. The contested nature of the forests adjancent to iSimangaliso Wetland Park was in fact pivotal to their exclusion from this particular protected areas. In order to illustrate the multiple and inderminate existence of this particular natural resource, Nustad focuses on the controversial role that environmental impact assessment (EIA) has played on the translation of these forests across different interest groups. In particular, EIAs conducted by anthropologists, which often describe forest in terms of local senses of place, are susceptible to overt criticisms by environmentalist actors for potentially denying the presence of universal values of conservation among local populations. This particular case illustrates how translations of natural resource across different human collectives are uncertain because of the very unruliness of natural resources, which, as complex agential assemblages, resist their transformation as mere objects of value. The analytic of translation, in Nustad's words, remind us that "all environmental imaginings must start from the realisation that environments are more than discursive objects. They are also the outcome of long histories of struggle, with human as well as more-than-human actors"[insert page ref later].

Through an ethnographic and historiographic focus on the peripheral region of Intag in western Ecuador, Kneas illustrates the particular processes and forms of translation through which distinct resources are constituted in resource frontiers. Emphasis is placed on one particular resource, *tierra baldia*, empty, uncultivated land, a category that has historically come to epitomize promises of future wealth and progress for the nation. Considering the perspectives and vantage points that characterized officials' accounts, and other documents including maps and land records, Kneas traces the history of the Intag region from an inaccessible backwater to a "flowering frontier", as officials drew the region into national discourses of *tierra baldia*, full of economic and cultural potential. Kneas' analysis of his archival research and ethnographic experience emphasizes the indeterminate spaces between translations of "land" and "landscape", where notions of property, domain, scenery, and materiality articulate with power and self-reflection as farmers read physical and social landscapes to negotiate their own

positions and the values of territories subject to (potential) land claims. Multiple conflictive translations of "uncultivated land" engender a process of becoming taking place at the intersection between the mobilization of discursive norms and framings by different political actors in the public arena and material interventions on the landscape affecting human and non-human engagement with and knowledge of this particular resource.

Brugger, McClaran and Sprinkle elucidate how competing imaginations and realities of US public lands have shifted in dominance over the last 120 years, each drawing on scientific evidence and citing cultural values to support their positions and make the case for different kinds of environmental interventions. Optimistic frontier imaginations of fertile rangelands supporting livestock stirred the ambitions of settling ranchers; these competed with imaginations of environments degraded by overstocking. The meanings of both have shifted over the years, interplaying with – for example - new infrastructures (e.g. railroads), emerging scientific evidence and models (e.g. equilibrium and non-equilibrium ecologies), and changing laws and notions of sovereignty. The authors' visual "storytelling" approach renders visible some of the myriad translations among actors in the shifting networks, exploring moments where connections are forged and where meanings and/or energy are exchanged among and between human and non-human entities. They approach the ongoing controversy as an ontological conflict; one which involves the "ongoing making of different realities/worlds." This ambitious undertaking builds on anthropological theory and ethnographic practice, yet also demands interdisciplinary engagement that entails its own challenges of translating terms and values.

In his article, Campbell contextualises relationships between poverty, place, and power for Tamang-speakers in north central Nepal, near the Langtang National Park. The idea of nature has been a predominantly elite discourse in Nepal which has often worked to extract value from territories designated as protected areas while suppressing Tamang resourcefulness in provisioning for livelihood needs. This translation of nature - employed in pursuit of policy agendas to tackle deforestation, soil erosion, biodiversity loss, and now also climate change – failed to recognize the humanitarian needs of villagers in the aftermath of the devastating 2015 earthquake, thus making visible the continuing estrangement of park and people, despite recent movement towards community involvement. In Tamang speaking villages, other (more relational) storylines of shamanic knowledge and sentient moral ecology can be found, but these are not usually legible to the environmentalist state. Campbell frames processes of accommodation and suppression in terms of collusion and collision among heterogeneous communicative orders. His ethnographic analysis ultimately shows the power of some translations to obscure other ontological possibilities, while recognising the unruliness of the landscapes of Langtang National Park and Nepal more broadly as spaces of collision "where no singular hegemonic type of ontology holds sway but dialogues of power, knowledge, and relational possibility confront each other and sometimes attempt mutual translation"[insert page ref later]. This has important

implications for relations among indigenous groups, the state, NGOs, animals, plants and things in the face of climate change.

Cahill´s article vividly shows how natural resources can not only be made, but also unmade through regulatory mechanisms that attempt to structure production practices responsible for the constitution of one particular natural resource, civet coffee. This highly priced product is the result of multiple translations in the production process and in its commercialization. In these translations, two extremely different types of resources, civets and coffee, become entangled through human control over the labor of this mammal, consisting in eating and defecating coffee cherries. Cahill's article focuses on conflicting translations of civets as a resource stemming from the intricate links connecting coffee-farming communities, local authorities, scientific classification systems, national government and global market actors. Translation, in this case, is more than a mere process of classification, since civets, as unstable and slippery resources, are known by humans through relations unfolding in multiple sensory fields - olfaction in particular. In civet coffee production, conflict over translation concerns the material conditions of civets' life, reflecting competing and incommensurable understandings of nature and domestication. In particular, ecological understandings of civets as dynamic elements of fragile environmental assemblages come into conflict with alternate understandings of these actors detached from conservation concerns.

Several themes link the articles presented in this special issue. Notions as diverse as frontiers, imagination, labour, dispossession and assemblage are ethnographically explored to inform some of the possible ways in which translations unfold as environmental processes. In the contribution by Brugger et al., storytelling offers productive sites and moments for expression, understanding and emergence of complex articulations of values and histories. The authors propose that multiple imaginations of US public lands are best understood as part of a complex "relational ontology" in which translation cannot be isolated as a merely epistemological process affecting meanings and discourses on nature. In Campbell's article, the practical and ritual elements of a boar hunt (and the subsequent distribution of meat) create possibilities for enacting relationships that do not always move smoothly across communicative orders. Contributions by Nustad, Cahill and Kneas also argue that the knowledges bound up in translations are not only discursive but enacted and embodied through human-non-human relationships: Nustad emphasizes the practical engagements with forests through which different dwellers produce (or inhibit) certain environmental and political transformations of the Isimangaliso wetlands; Cahill envisions environments as relational assemblages continually in construction by organisms, and "translation" as a means to address differences in understandings and descriptions of civets as they are figured in relation to "nature"; Kneas reflects on the materiality of land and weather, and the sensory experiences of movement and vision that underpin balances of power and claims to land for those inhabiting or passing through the contested landscape of a shifting frontier. Alongside Cahill's striking account of civet scents, we are thus reminded that - as ethnographers, fieldworkers, anthropologists - we are of course also implicated in translating environments, in every sense. Paige West's poignant afterword pulls together

core theoretical and methodological threads running through the papers – the figure of the palimpsest that underpins understandings and translations of environments, the affective experiences that constitute environmental engagements, and the urgent political questions raised as we try to understand the implications of different worlding practices in the contemporary moment.

Taken together, the articles presented in this special issue invite us to consider the constitution of natural resources as a process generative of and generated by ongoing translations and emergent indeterminacies. A focus on these two phenomena can equip us with new conceptual tools to reframe the very notion of natural resource from a stable object to be employed in economic exchanges to a processual actor entangled in political affairs. Attention towards translations and indeterminacies makes evident the need to look at the contrasting regimes of temporality emerging from the constitution of natural resources. When can the constitution of a natural resource be said to begin and when to end? How do translations constitute the history of a natural resource? What effects does the narration of this process hold on our comprehension and material engagement with natural resources? What can be learned and understood about politics, practices and implications of sovereignty through translating environments? What types of translations are productive of agrarian change? How do transformations in labor practices and arrangements produce translations of natural resources? These questions will be tackled in the remainder of this volume through historically grounded ethnographies that articulate and demonstrate the importance of anticipation, imagination, storytelling, collaboration, rhetoric and knowledge production for the making and unmaking of natural resources around the world.

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